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SÉMINAIRE

# Approche dynamique pour l'interprétation causale dans les études portant sur le vieillisement

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We consider the issue of estimating causal effects in a dynamic approach based on a multivariate stochastic process representation, which may be called the "stochastic system approach". Conditional and marginal effects can be defined. We focus on the issue of the horizon on which causal influence must be studied, in particular in ageing studies. In ageing studies, one of the most important events that we have to consider is "death". This is why the illness-death model is important in such studies. But "death" is not an event which is on the same footing as other events that can happen to subjects. Even if the vital status is part of the state, it has a very special meaning, in that all the other components of the state are defined only for a living subject. The consequence is that causal influences must be defined on a maximum horizon which is the time of death. We do not say that death has an influence on the other components of the state, but that these other components are not defined after death. For instance if we are interested in dementia, the state can be represented by a bivariate counting process counting dementia and death. However dementia is defined only for a living subject: after death the subject does not exist anymore and cannot be qualified as demented or not demented. When we investigate the causal influence of a factor, we should first look at its causal influence on death, then on its influences on other processes. Cases where a value of a modifiable factor can be preferred to another one will be given. Thus, the stochastic system approach helps clarifying the important issue of assessing causal effects in ageing studies Contact : Mme Mariethé CHAUMEIL Inscription gratuite mais obligatoire (commande sandwichs avant le lundi 16 MARS 2015 Courriel : mariethe.chaumeil@chu-lyon.fr